Expert Recommender and Reputation Failure

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Abstract

This paper studies the role of a recommender's career concerns in his long-run relationship with a consumer when the recommender has a private type in his expertise. An informed type's expertise is valuable for ongoing purchasing decisions of the consumer, whereas an uninformed type lacks the expertise. The uninformed type cannot mimic the informed type, suggesting that the informed type can build a reputation for competence and that an equilibrium should exhibit information transmission. Nonetheless, I find that the relationship completely breaks down if the recommender is sufficiently patient and thus has stronger career concerns. Moreover, this occurs even when the uncertainty of expertise is arbitrarily small.

Introduction

Consumers' decisions often rely on experts' recommendations. However, there might be an uncertainty in experts' competence. For example, many social media influencers self claim to be experts, but lack formal training in their fields of expertise. In this case, consumers do not trust recommendations if they are not confident in recommenders' expertise. A naïve intuition suggests this situation is improved in a repeated game because recommenders naturally develop a career concern, and more importantly, incompetent experts cannot mimic competent experts. However, I show that this needs not be the case. In fact, the relationship may completely breaks down in a repeated game.

Model

Two long-run players with a common discount factor δ. In each period $t = 1, 2, \dots$, a new product arrives to recommender who chooses whether to recommend (*R*) or not (*NR*) to the consumer. If *R* is chosen, consumer chooses to buy (*B*) at a price p or not (*NB*). If *NR* is chosen, the stage game ends immediately.

Product value $v \in \{0,1\}$ is $i.i.d.$ across periods, where $Pr(v = 1) = q < p < 1$. Recomender has a persistent information type.

- Informed type knows the product value perfectly.
- Uninformed type and consumer only know the distribution.
- Consumer's initial prior is $\theta_0 = \Pr(informed)$.

Payoff structure is summarized in Table 1.

- *S*: product is recommended, bought, and turns out suitable $(v = 1)$.
- *NS*: product is recommended, bought, and turns out unsuitable $(v = 0)$.
- *NB*: product is recommended but not bought.
- *NR*: product is not recommended.
- **Assumption 1: $\overline{u} > 0$, $\underline{u} < 0$, $q\,\overline{u} + (1-q)\,\underline{u} > 0$.** (Informed type' static incentives are aligned with consumer's, but uninformed type's are not)

	S	NS	NB	NR
Consumer	$1-p$	$-p$	0	0
Recommender	$\overline{u}$	$\underline{u}$	0	0

Table 1. Payoff Structure

Product value is publicly revealed if and only if outcome *S* or *NS occurs.*

Solution Concept

Markov Perfect equilibrium with an Efficiency Property:

- State variable: θ, consumer's belief that recommender is informed.
- Markov strategies: r_S, r_{NS}, $r_\emptyset$ map from θ to a probability of recommending if $v = 1, v = 0$, and no information; b maps from θ to a probability of buying.
- Beliefs: Bayes rule whenever applicable; $\theta = 1$ is absorbing.

Efficiency Property: once $\theta = 1$, the continuation equilibrium is efficient in the sense that informed type recommends honestly, uninformed type always recommends, and consumer always follows recommendations.

There exists a trivial equilibrium such that all players obtain 0 payoff at any $\theta < 1$. Any such equilibrium is referred to as a babbling equilibrium.

Static Benchmark

The Pareto-optimal equilibrium of one-shot game has a cutoff structure: the consumer buys if and only if she sufficiently trusts the recommender's expertise.

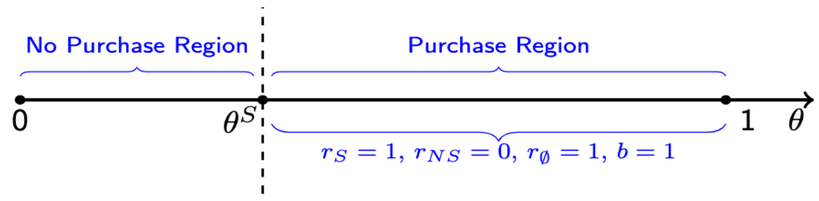

Figure 1. Pareto Optimal Equilibrium of One-shot Game

Results

Theorem: The unique equilibrium outcome is babbling if and only if $\delta > \frac{1}{1+\sqrt{1-q}}$.

- Fix q, the relationship completely breaks down if recommender's career concerns are sufficiently strong. Moreover, the result does not depend on θ_0.
- Fix δ, the relationship is easier to sustain if products are ex-ante more suitable.

Intuition:

- Uninformed type obtains a positive payoff only if he recommends and consumer buys by Assumption 1. This induces him to recommend sometimes.
- If uninformed type recommends, then informed type who sees an unsuitable product does not recommend to both avoid flow loss and get separated. So, recommending is risky for uninformed type as his type is revealed if *NS* occurs. In contrast, he obtains a lucrative payoff by deviation. This induces him to deviate.

Remarks: the culprit is uninformed type's career concerns. The result is true even if informed type is myopic. This feature is different from most papers in the literature of bad reputation, including Ely and Välimäki (2003), which focus on how good types' perverse incentives destroy informative equilibria.

Key Assumptions

The result clearly depends on the payoff structure. Figure 2 summarizes the outcome for each $\underline{u}$ while holding $\overline{u} > 0$ fixed.

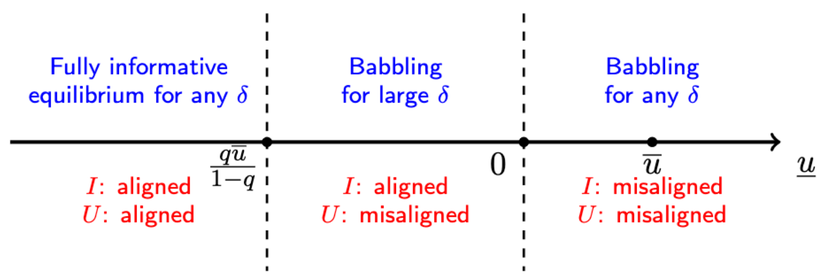

Figure 2. Equilibrium Outcomes as a Function of $\underline{u}$

Moreover, the result depends on the Efficiency Property crucially. However, even if this property is dropped, it is possible to show that

- Uninformed type's highest payoff over θ in any equilibrium vanishes as $\delta \to 1$.
- If consumer is myopic, then consumer's and informed type's highest payoff over θ in any equilibrium such that informed type is honest vanishes as $\delta \to 1$.

The main insight of the paper still applies if

- Consumer can buy a product that is not recommended.
- Informed type is not perfectly informed of product suitability.
- Informed type faces a pool of products that are ex-ante more suitable.

Conclusions

I identify a novel mechanism of reputation failure. Relative to the static benchmark, the relationship between consumers and experts in the repeated game may be weakened instead of strengthened. It can be shown that if there is only uncertainty in recommender's payoff, reputation failure no longer occurs in my model. This is intriguing because with uncertainty in payoff, mimicking is possible, but with uncertainty in information, mimicking is impossible, suggesting it might be easier to separate. My result implies that such naïve intuition is incorrect.

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Reference

1. Ely, Jeffrey and Juuso Välimäki, "Bad Reputation," Quarterly Journal of Economics, 2003, 118 (3), 785–814.